

Application No. 09/849,437
Amendment under 37 CFR 1.111
Reply to Office Action dated July 30, 2003
December 1, 2003

REMARKS

By this amendment, claims 1, 4, 7, 8, 11 and 12 have been amended. Currently, claims 1-12 are pending in the application.

Claim 1 was rejected under 35 USC 102(b) as being anticipated by Izor et al. (U.S. Patent No. 5,715,068).

This rejection is respectfully traversed in view of the amendments to claim 1 and the remarks below.

The present invention relates to a machine tool which comprises a fixed bed 2, a pair of tool posts 4 and carriage 3 on which are mounted each of the tool posts 4 as shown in Figs. 1 and 2. The machine tool also includes a headstock base 10 having the headstock 5 disposed thereon. The headstock and the headstock base are structured and arranged so as to be movable between a workpiece machining position A and a workpiece loading and unloading position B as described on page 3, line 5 - line 10 of the specification. The workpiece loading and unloading position B allows easy workpiece loading and unloading. A chip collecting opening 2d' is provided in the fixed bed 2 between the carriages 3 and the headstock 5 when the headstock 5 is positioned in the workpiece machining position A. The fixed bed

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2 also includes a tunnel 2d formed therein that extends along the longitudinal length of the machine tool. The chips that have fallen into the chip collecting opening 2d' can be collected through the tunnel 2d as described on page 9, lines 20-23. In the present invention, the workpiece loading and unloading operations are significantly improved by changing the position of the headstock base with the headstock for replacing the workpiece.

To clarify the orientation of the machine tool, claim 1 has been amended to recite "a fixed bed, said fixed bed having a longitudinal axis, said fixed bed also including a first side and a second side disposed apart from each other and being intersected by the longitudinal axis".

Claim 1 also recites "a headstock base having said headstock disposed thereon, the headstock and the headstock base are attached to each other and move together between a workpiece machining position where the workpiece can be machined at the second side of said fixed bed and a workpiece loading and unloading position where the workpiece can be loaded and unloaded adjacent the first side of said fixed bed". Claim 1 also recites "at least one tool post mounted on a first side of said fixed

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bed, wherein said at least one tool post being mounted on at least one carriage".

Izor et al. relate to an engraver and more particularly, Izor et al. relate to a cylinder support and method for supporting cylinder to be engraved in an engraver.

Izor et al. disclose that the engraver 10 comprises a base 12 having a headstock 16 and tailstock 18 slidably mounted in tracks 20 such that the headstock 16 and tail stock 18 can move towards and away from each other.

Izor et al. also disclose that driving both the headstock 16 and tailstock 18 permits cylinders 14 of carrying lengths to be loaded by an overhead crane, for example, whose path is perpendicular to the axis of rotation of the engraver. However, it should be appreciated that a stationary headstock 16 and tailstock 18 may be used with a driven tailstock 16 or headstock 18.

Izor et al. also disclose that the engraving head 22 is slidably mounted on a carriage 24 such that a third drive means or third drive motor 21 can drive the engraving head 22 towards and away from the cylinder 14 in a direction which is generally radial with respect to the center axis of cylinder 14. The

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carriage 24 is also slidably mounted on base 12 such that the carriage traverses the entire surface 13 of cylinder 14 in the direction of double arrow 26 in Fig. 1, which is generally parallel to the axis of the cylinder 14.

Izor et al. do not disclose that the fixed bed having a longitudinal axis, the fixed bed also including a first side and a second side disposed apart from each other and being intersected by the longitudinal axis; at least one tool post mounted on a first side of said fixed bed, wherein the at least one tool post being mounted on at least one carriage.

Izor et al. also do not disclose that the headstock and the headstock base are attached to each other and move together between a workpiece machining position where the workpiece can be machined at the second side of said fixed bed and a workpiece loading and unloading position where the workpiece can be loaded and unloaded adjacent the first side of said fixed bed.

For these reasons, it respectfully submitted that claim 1 is allowable over Izor et al. and this rejection should be withdrawn.

Claims 4, 7 and 8 were rejected under 35 USC 103(a) as being obvious over Izor et al.

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The Examiner admitted that Izor et al. do not teach a pair of tool posts. However, the Examiner believed that it would have been obvious to incorporate a pair of tool posts, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art.

This rejection is respectfully traversed in view of the remarks below.

Claim 7 recites "a headstock base having said headstock disposed thereon, the headstock and the headstock base are attached to each other and move together between a workpiece machining position where the workpiece can be machined at the second side of said fixed bed and a workpiece loading and unloading position where the workpiece can be loaded and unloaded adjacent the first side of said fixed bed." Also, claim 7 has been amended to recite "a fixed bed, said fixed bed having a longitudinal axis, said fixed bed also including a first side and a second side disposed apart from each other and being intersected by the longitudinal axis."

Applicants believe that it is not obvious to incorporate a pair of tool posts in Izor et al. This is because Izor et al. relates to the basic principle of electro-mechanical engraving of

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a gravure cylinder that involves rotating a plated cylinder while actuating an electrically driven tool which cuts or engraves cells or lines into the surface of the plates cylinder. Izor et al. disclose that the engraved cylinder is normally used in a web-type gravure printing press for printing paper, plastic or metallic film material. Izor et al. also disclose that to obtain a high quality print, it is necessary that the cells be very accurately placed or located on the cylinder surface, usually within 1 or 2 microns of a desired predetermined location. The depth of the engraved cells must also be accurately controlled since the depth determines the amount of ink transferred which, for example, determines the shade of gray in a black/white print.

Therefore, applicants believe that since Izor et al. need to control the engraver's action very accurately and precisely, it would not have been obvious to incorporate a pair of tool posts as disclosed in the present invention. Applicants also believe that two engravers would not be used simultaneously as this would affect the accuracy of the cuts. For these reasons, it respectfully submitted that claims 4, 7 and 8 are allowable over this rejection and this rejection should be withdrawn.

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Claims 2-3, 5-6, 9 and 11-12 were rejected under 35 USC 103(a) as being obvious over Izor et al. in view of Neumann (U.S. Patent No. 4,742,609).

The Examiner admitted that Izor et al. do not disclose a chip collector having a tunnel formed therein. However, the Examiner believed that Neumann teaches a machine center having a chip conveyor that collects chips from the main machine room extending through an extension. The Examiner believed that it would have been obvious to incorporate a chip collector as taught by Neumann in the machine tool of Izor et al. for the purpose of collecting chips.

This rejection is respectfully traversed in view of the amendments to claims 1, 7 and 11-12 and the remarks below.

Claims 1 and 7 have been amended as discussed above. Claims 11 and 12 have been amended to recite "a fixed bed, said fixed bed having a longitudinal axis, said fixed bed also including a first side and a second side disposed apart from each other and being intersected by the longitudinal axis". Claim 11 also recites "a headstock base having said headstock disposed thereon, the headstock and the headstock base are attached to each other and move together between a workpiece machining position where

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the workpiece can be machined at the second side of said fixed bed and a workpiece loading and unloading position where the workpiece can be loaded and unloaded adjacent the first side of said fixed bed". Claim 11 also recites "a pair of tool posts mounted on the first side of said fixed bed, wherein each of said tool posts being mounted on a respective carriage". Claim 12 also recites "a pair of tool posts mounted on the first side of said fixed bed, wherein each of said tool posts being mounted on a respective carriage". Claim 12 also recites "said headstock being movable between a workpiece machining position where the workpiece can be machined at the second side of said fixed bed and a workpiece loading and unloading position where the workpiece can be loaded and unloaded adjacent the first side of said fixed bed".

Applicant submits that claims 2-3, 5-6, 9 and 11-12 are allowable for the reasons set forth above in connection with Izor et al. and the amendments made to claims 1, 7 and 11-12 in this amendment.

Additionally, Neumann does not make up for the deficiencies in Izor et al. Neumann relates to a system for automation of a metal machining center, such as a turning center and more

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particularly to such a center which eliminates most operator intervention during automatic machining operations.

Neumann discloses that the principal components of the system are a headstock 20, a bed 25 extending transversely to the headstock spindle axis along the side of the machine room opposite the headstock and having a set of rectangular ways 28 thereon. These bed ways support a slide 30 which is power driven along the ways and carries a cross-slide 34 supported on ways 36 and power driven in a direction generally parallel to the headstock spindle axis. The cross-slide supports a ram 35 which may be either fixed to the cross-slide, or be mounted on additional ways (not shown) with an additional drive if it is desired to shorten the travel of the cross-slide and still obtain the desired maneuverability of the ram.

Neumann also discloses that the headstock 20 includes a main driven spindle 54 mounted therein and carrying chuck 48 located at the end of the spindle. The headstock 20 is mounted on a base 58 and is powered by a conventional drive 60, which preferably is a reversible drive to allow for machining operations across the centerline (or axis of rotation) of the headstock without requiring additional tools for that purpose.

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Neumann also disclose that the bed 25 is spaced an appropriate distance from the headstock depending upon the size of workpieces that the particular metal machining center is designed to accommodate and chip conveyor 52 extends along the bottom of that space.

Neumann also does not disclose that the headstock and the headstock base are attached to each other and move together between a workpiece machining position where the workpiece can be machined at a second side of said fixed bed and a workpiece loading and unloading position where the workpiece can be loaded and unloaded adjacent the first side of the fixed bed.

Neumann does not disclose that a chip collecting opening being disposed in the fixed bed between the respective carriages and the headstock and being open when the headstock is positioned in the workpiece machining position and being closed when the headstock is positioned in the workpiece loading and unloading position.

Therefore, applicant respectfully submits that one of ordinary skill in the art would not have combined Izor et al. and Neumann to meet the limitations of claims 2-3, 5-6, 9 and 11-12 and this rejection should be withdrawn.

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It is therefore respectfully submitted that Izor et al. and Neumann, individually or in combination, do not disclose or suggest the presently claimed invention and it would not have been obvious to one of ordinary skill in the art to combine these references to render the present claims obvious.

Further, there is no teaching or suggestion in either Izor et al. or Neumann for combining these references. Every if one of ordinary skill in the art, were to include a chip conveyor and associated structures, which applicants do not admit is possible, the structure and function of Izor et al. would be destroyed. Also, the chip conveyor would not be possible to locate between the cylinder and the engraving head in Izor et al. because it would be disrupted by the headstock 16 or the tailstock 18 as there is no clearance for the conveyor. Accordingly, independent claims 1 and 7 (and their dependent claims) and independent claims 11 and 12 define over the prior art of record and should be allowed.

In view of foregoing amendments and remarks, it is respectfully submitted that the pending claims are allowable over the prior art of record, individually or in combination thereof. Thus, applicants respectfully submit that the application is now


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in condition for allowance and an action to this effect is
respectfully requested.

If there are any questions or concerns regarding the
amendments or these remarks, the Examiner is requested to
telephone the undersigned at the telephone number listed below.

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Respectfully submitted,


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